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NIXON & VANDERHYE, PC			CALANDRA, ANTHONY J.	
901 NORTH GLEBE ROAD, 11TH FLOOR			ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,869	<b>Applicant(s)</b> SLAGHEK ET AL.
	<b>Examiner</b> ANTHONY J. CALANDRA	<b>Art Unit</b> 1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 19 March 2009.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-18 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 3/19/2009
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_

***Detailed Office Action***

The communication dated 3/19/2009 has been entered and fully considered.

Claim 18 is new. Claims 1-17 are amended. Claims 1-18 are currently pending.

***Response to Arguments***

*Discussion of amendments*

Applicant amended the claims to remove the European style ‘use’ recitation. Therefore the 112<sup>nd</sup> and 101 rejections to these claims have been withdrawn. However, the applicant still does not actively recite in the body of the claim of combining of the bleached particulate material with the cellulose fibers. As such the mixing with cellulose fibers is written as an intended use and does not give patentable weight to the claims. As such the instant independent claim process can be read on by any process that performs steps a) through d). The claims could even be interpreted to include, the bleaching of a person’s hair and cutting of hair of a person at a hair salon.

*112 rejections*

In light of arguments the 112 rejections to claims 15 and 16 have been withdrawn.

*Claim objections*

The applicant correctly fixed the claim number dependency but did not address how the claim limits claim 1 further.

*Art rejections*

**Applicant amended the claims to state that the time period of treatment was from 5 minutes to 16 hrs. Applicant argues that both of the applied references require 24 hrs.**

As for process claims 1-14, the examiner takes the person of ordinary skill in the art to be a chemist or a chemical engineer (Graham factor 3). A chemist or a chemical engineer would instantly recognize that time and the amount of a reaction that has occurred are related. In bleaching or oxidizing at Time=0 it is known that no reaction has occurred. At some point in time in the future, Time=comp, the bleaching/oxidation reaction will proceed to completion. Between T=0 and T=comp the amount of reaction that has occurred will steadily increase. At the time of the invention it would have been obvious to optimize the time of reaction to the person of ordinary skill in the art to balance the amount of reaction that will occur with the cost of equipment of bleaching (longer time = larger equipment necessary and thus higher costs). The person of ordinary skill in the art would expect at lower time for less oxidation to occur and therefore be of lower brightness.

In ANDERS the hair after treatment is perfect white [pg. 1 line 37] after 24 hrs. It would be expected that the fibers would be somewhat less white after a treatment 5 minutes - 16 hrs. In contrast the applicant's specification does not state how white the animal hair is made. The person on ordinary skill in the art further has other parameters which could possibly be optimized such as temperature (increasing temperature increases reaction rate and thus decreases time) or increasing peroxide concentration (increasing peroxide concentration increases the amount of reaction occurring and hence would decrease time). Such optimizations are known to

the person of ordinary skill in the art by elementary kinetic theory.

Alternatively, the examiner presents the further reference, described below DIAS et al., U.S. Publication 2002/0053110.

**Applicant argues that the references are old and are from 1920 to 1931 and argues that no person has considered a shorter oxidation period as provided by the present invention.**

In response to applicant's argument based upon the age of the references, contentions that the reference patents are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977).

Additionally, the art bleaching with peroxides of mammalian hair has certainly has certainly progressed since 1920 and 1931. DIAS teaches both a commonly known alkaline peroxide hair bleaching treatment and a new acidic hair bleaching treatment that take about an hour.

**Applicant added product by process claim 18 in which 20% animal fiber is required in the paper. The applied reference, AKITARO claims 85:15-10:90 ratio of animal fibers to cellulose fibers applicant argues there is no suggestion of at least 20% weight with cellulosic fibers.**

Applicant claims greater than 20% fibers. This is an open ended range that the applicant does not have support for. This range would also reasonably comprise 99% animal hair fibers. The applicant only has support for up to 20% to 60% [pg. 4 line 25], 20% - 50% [pg. 4 line 28], 20% -45% [pg. 4 line 30] and 20%-30% [Figure 1]. Applicant has support for other lower ranges such as 5 and 10% [Figure 1] and 0.1 to 1% [pg. 4].

Additionally, to show unexpected results the applicant must show that the results are retained throughout the claimed range, however, the evidence provided only shows animal hair stretch [Figure 5] at 20% and 30% and does not show 40%, 50%, or 60% (assuming the broadest range with support in the spec).

Finally AKITARO, teaches 85:15-10:90 animal fiber to cellulose fiber, therefore AKITARO teaches the overlapping range of 10%-85%

#### *Double Patenting Rejections*

The examiner has withdrawn the obvious double patenting rejection towards 10/589868 as the applicant's removal of 'use' language correctly distinguishes the two applications.

#### *IDS*

The IDS has been signed and the files are present in the case file. The files were previously reviewed during the prior action.

***Claim Objections***

1. Claim 14 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form. Hairs are fibers so it is unclear how claim 14 actually limits the parent claim.

***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 4, 5, and 8-11 of copending Application No. 11/628,715. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending and instant application both disclose a method for

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treating animal fibers which are not patentably distinct from each other. The use of the bleached fibers of the instant claimed invention is an intended use and therefore has not been given patentable weight. Further a mixture of cellulose with fibers is a composite material.

Instant claims 1-3 and 14: see copending claims 1, 2, and 11. The copending application does not mention treatment time. However, time is a common and well known variable that would be obvious to optimize to the person of ordinary skill in the art.

Instant claims 4 and 5: the copending application claims a bleaching/oxidizing agent. Peroxide is a common and well/known bleaching agent.

Instant claims 6 and 7: see copending claims 4 and 5.

Instant claims 12 and 13: see copending claims 8-10.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 4-9 and 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 1,331,609 ANDERS, hereinafter ANDERS, in view of Japanese Publication JP 3174041A AKITARO et al., hereinafter AKITARO and, if necessary, US 2002/0053110 DIAS et al., hereinafter DIAS, or in the alternate, AKITARO in view of ANDERS and, if necessary DIAS.

Examiner shall refer to the patent abstract of the Japanese Publication from esp@cenet.

As for claim 1, ANDERS discloses a process for bleaching animal hair to a uniform shade [column 1 lines 9-15].

ANDERS discloses that cow and pig hair can be treating hair in an oxidizing solution which comprises hydrogen peroxide (*subjecting mammalian hair to an oxidation treatment in which the hair is contacted with a solution, which comprises a bleaching agent* [lines 75-80]).

ANDERS discloses that the hair is then washed in a bath comprising acetic acid or soap;

thereby the hair is separated from the oxidizing solution (*separating the oxidized hair from the solution* [lines 80-86]).

It is the examiner's position that once the hair is removed from the washing solution it will begin to dry. Drying is an obvious process occurs when an object is removed from a water source and left in air. Additionally, ANDERS discloses that the hair may then treated with formaldehyde. Formaldehyde is a volatile substance and therefore acts to dry the hair (*drying the separated hair* [pg. 2 lines 1-5])

The examiner finds the person of ordinary skill in the art to be a chemist or a chemical engineer (Graham factor 3). A chemist or a chemical engineer would instantly recognize that time and the amount of a reaction that has occurred are related. In bleaching or oxidizing at Time=0 it is known that no reaction has occurred. At some point in time in the future, Time=comp, the bleaching/oxidation reaction will proceed to completion. Between T=0 and T=comp the amount of reaction that has occurred will increase. At the time of the invention it would have been obvious to optimize the time of reaction to the person of ordinary skill in the art to balance the amount of reaction that will occur with the cost of equipment of bleaching (longer time = larger equipment necessary and thus higher costs). The person of ordinary skill in the art would expect at lower time for less oxidation to occur and therefore be of lower brightness.

In ANDERS the hair after treatment is perfect white [pg. 1 line 37] after 24 hrs. It would be expected that the fibers would be somewhat less white after a treatment 5 minutes - 16 hrs. In contrast the applicant's specification does not state how white the animal hair is made. The person on ordinary skill in the art further has other parameters which could possibly optimized such as temperature (increasing temperature increases reaction rate and thus decreases time) or

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increasing peroxide concentration (increasing peroxide concentration increases the amount of reaction occurring and hence would decrease time). Such optimizations are known to the person of ordinary skill in the art by elementary kinetic theory.

In the alternate, if necessary, the art of bleaching hair has steadily progressed since ANDERS. DIAS teaches bleaching animal hair [0007]. DIAS teaches well known alkaline treatments for 10 to 60 minutes which falls within the instant claimed range [0007]. DIAS further teaches acidic peroxide treatments [0037 and 0057] which take preferably 5 to 30 minutes [0258]. At the time of the invention it would have been *prima facie* obvious to apply either of the well known alkaline treatments or the new acidic treatment DIAS to the hair of ANDERS. The person of ordinary skill in the art would be motivated by the lower treatment times required as compared to the process of ANDERS.

ANDERS does not disclose a use for the animal fibers after they have been bleached. AKITARO discloses that animal fibers can be cut to 3-10 mm in length which overlaps with the instant claimed range (*subjecting the dried hair to a treatment in which the hair is formed into a particulate material having an average particle size in the range of from 0.5 to 4 mm* [abstract]). The animal hair fibers are subsequently added to cellulose pulp and then formed into paper.

At the time of the invention it would be obvious to a person of ordinary skill in the art to use the bleached animal fibers of ANDERS in the paper product making process of AKITARO. It is *prima facie* obvious to apply a known technique to a known product ready for improvement to yield predictable results. In the instant case it would have been obvious to improve a known

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product such as bleached animal fibers by incorporating them into a value added product such as paper. A person of ordinary skill in the art would expect the animal fibers to work in the process of AKITARO whether they were bleached or not bleached.

In the alternative, it would have been obvious to bleach the animal fibers used in the paper of AKITARO by the process of ANDERS. A person of ordinary skill in the art would be motivated to do so to have fibers which are whiter and have a higher brightness. Whiteness and brightness are both desirable properties of paper. It is *prima facie* obvious to use known techniques to improve similar products in the same way. In the instant case animal fibers would be improved by bleaching them. A person of ordinary skill in the art would expect the fibers of AKITARO to be bleached.

As for claims 4 and 5, ANDERS discloses hydrogen peroxide, perborates, and percarbonates [lines 97-107].

As for claims 6 and 7, ANDERS discloses that the hydrogen peroxide treatment takes place in an alkaline solution, which is a pH greater than 7, which overlaps with the instant claimed ranges [claim 1]. ANDERS does not disclose the exact pH of the solution; however ANDERS does disclose the use of ammonia to increase the alkalinity. At the time of the invention it would have been *prima facie* obvious to optimize the pH of the treatment solution through routine experimentation. ANDERS describes that alkalinity should be adjusted [lines 79-80] and therefore alkalinity is a result effective variable [see e.g. MPEP 2144.05 (II) (B) Optimization of ranges and result effective variables].

As for claims 8 and 9, DIAS teaches as per above an improved acidic bleaching process at a pH of 3.5 to 4.5 which overlaps with the instant claimed ranges [0037].

As for claim 11, ANDERS discloses that the hair can first be washed prior to treatment [lines 57-60].

As for claims 12 and 13, ANDERS discloses both pigs and cows [lines 11 and 12].

As for claim 14, hairs are fibers and therefore the particulate matter of hairs also comprises fibers. Additionally once mixed with cellulose pulp said cellulose are also fibers.

As for claims 15-17, the combination of ANDERS and AKITARO forms a pulp product and a paper product that is substantially the same as the instant claim or would be an obvious variant thereof. Paperboard is well known in the art as a thicker paper sheet; at the time of the invention it would have been obvious to a person of ordinary skill in the art to optimize paper thickness to obtain a paperboard.

As for claim 18, ANDERS/AKITARO and if necessary, DIAS, teach the product as per above. AKITARO further teaches that teaches 85:15-10:90 animal fibers to cellulose fiber, therefore AKITARO teaches the overlapping range of 10%-85%.

4. Claims 2, 3, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 1,331,609 ANDERS, hereinafter ANDERS, in view of Japanese Publication JP 3174041A AKITARO et al., hereinafter AKITARO, or in the alternate, AKITARO in view of ANDERS, as applied to claim 1 above, and further in view of Handbook for Pulp and Paper Technologists by SMOOK, hereinafter SMOOK.

As for claim 10, AKITARO discloses that the animal fibers should be 3-10 mm in length and that said fibers are mixed with cellulose. SMOOK discloses that prior to papermaking pulp can be subjected to refining which alters the fibers and always shortens them to a certain extent [pg. 197 column 2]. At the time of the invention it would have been *prima facie* obvious to

refine the animal and cellulose fibers prior to paper making. A person of ordinary skill in the art would be motivated to do so to obtain optimum strength development and control stock freeness [pg. 205 column 1].

As for claims 2 and 3, AKITARO discloses that the fibers can be 3-10 mm in length. The endpoint of 3 mm of the range is the same endpoint of instant claim 2. As for instant claim 3, the prior art range is exclusive but close to the instant claim range. It is the examiner's position that the refining process of SMOOK will further serve to cut the fibers and cause said fibers to have lengths less than 3mm. In the alternative, the claimed ranges are close enough that one skilled in the art would have expected them to have the same properties and therefore a *prima facie* case of obviousness would exist absent evidence of unexpected results.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. CALANDRA whose telephone number is (571) 270-5124. The examiner can normally be reached on Monday through Thursday, 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AJC/

/Eric Hug/  
Primary Examiner, Art Unit 1791